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Title: w17_seismicsources "Walking the road from Impacts to Seismic Sources for celestial bodies"

Author(s): Larmat, Carene
Lei, Zhou
Knight, Earl E.
Rougier, Esteban

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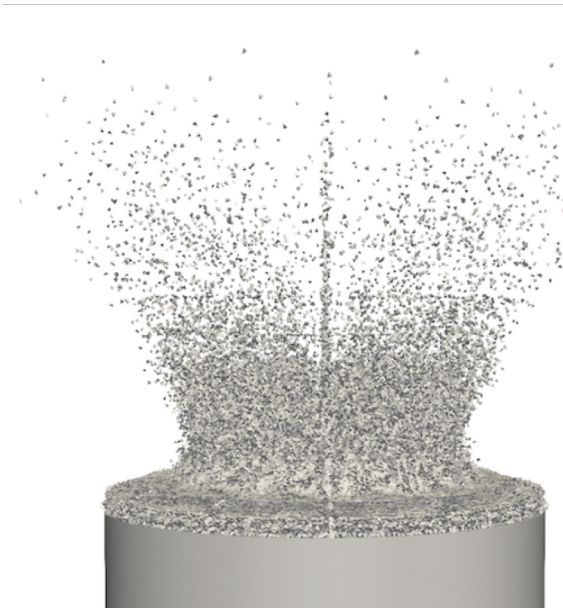
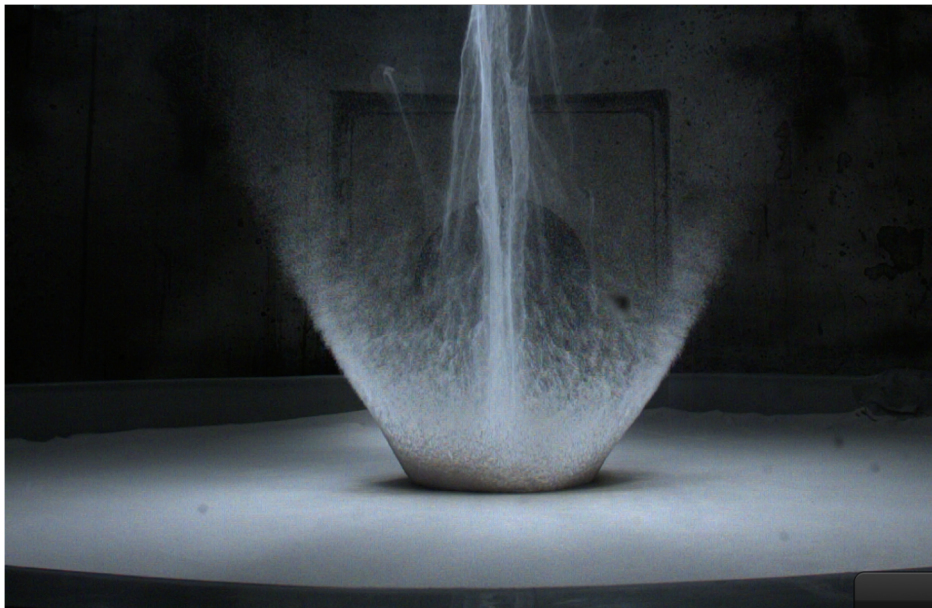
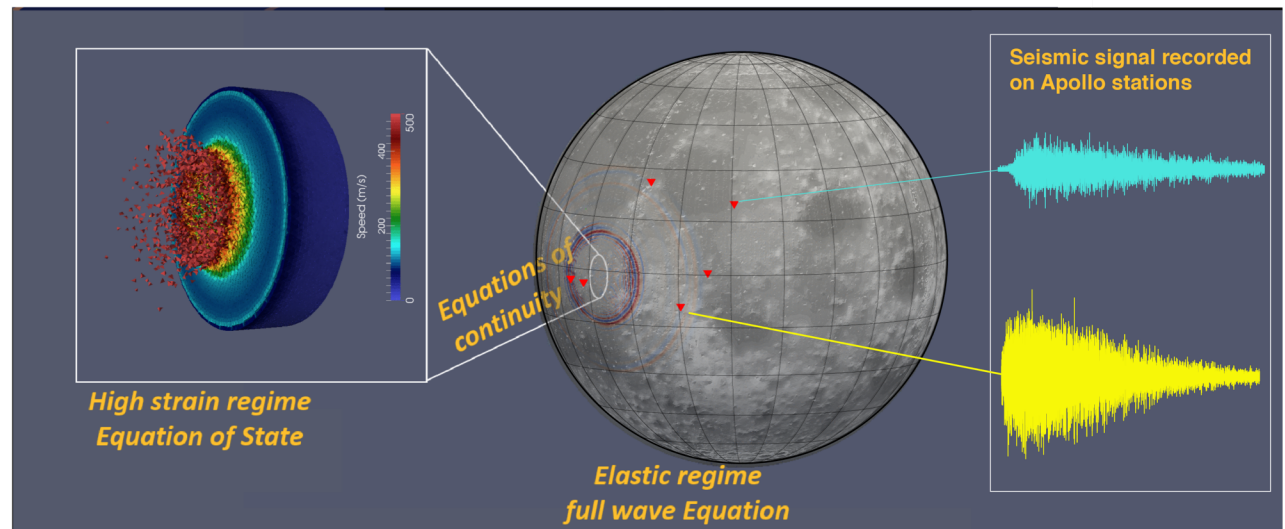
PI: C. Larmat EES-17

Participant: Zhou Lei, Earl Knight, Esteban Rougier, EES-17

We are developing new numerical models of meteor impacts as generator of seismic waves. Such models are needed for the exploitation of impact data on future NASA missions.

Our numerical models use two codes: HOSS, a Finite-Discrete Element method code developed at LANL for the impact modeling and SPECFEM3D, a spectral element method open-source code for the modeling of wave propagation. The two codes are run subsequently, the output of HOSS being used to drive SPECFEM3D as an external boundary.

Our numerical codes allow us to investigate how efficient are impact to generate seismic waves. Current models differ by several orders of magnitude.



Left: high-resolution camera capture of an impact performed at the Ames Vertical Gun Range NASA facility.

Right: Modeling performed on LANL HPC resources using the LANL developed suite HOSS based on an unique Finite-Discrete Element method (FDEM).